

### REMARKS

By this amendment, claims 10, 21 and 23-33 have been canceled. Claims 1-9, 11-20 and 22 have been amended. Claims 1-9, 11-20 and 22 remain in the application. Support for the amendments can be found the specification and drawings. No new matter has been added. This application has been carefully considered in connection with the Examiner's Action. Reconsideration, and allowance of the application, as amended, is requested.

#### **Rejection under 35 U.S.C. §101**

Claims 1-11 and 23-33 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. With respect to claims 10 and 23-33, the same have been canceled herein, thus rendering the rejection thereof now moot. With respect to claims 1-11, Applicant respectfully traverses this rejection for at least the following reason. As now presented, claim 1 is directed to an audio-visual content synthesis apparatus ... comprising: means for extracting (i) audio features of the speaker's speech and (ii) visual features of the speaker's face from the audio-visual input signals; means for creating audiovisual input vectors from (i) the extracted audio features and (ii) the extracted visual features, wherein each audiovisual input vector comprises a hybrid logical unit that exhibits properties of both (a) the phonemes and (b) the visemes; means for creating audiovisual configurations from the audiovisual input vectors, wherein the audiovisual configurations comprise speaking face movement components in an audiovisual space; and means for performing a semantic association procedure on the audiovisual input vectors to obtain an association between phonemes that represent the speaker's speech and visemes that represent the speaker's face for each audiovisual input vector. Accordingly, claim 1 is directed to statutory subject matter. Claims 2-9 and 11, which depend from claim 1, are also directed to statutory subject matter. Withdrawal of the rejection is requested.

**Rejection under 35 U.S.C. §103**

Claim 1 recites an audio-visual content synthesis apparatus for (i) receiving audio-visual input signals that represent a speaker who is speaking and (ii) creating an animated version of the speaker's face that represent the speaker's speech, said apparatus comprising:

means for extracting (i) audio features of the speaker's speech and (ii) visual features of the speaker's face from the audio-visual input signals;

means for creating audiovisual input vectors from (i) the extracted audio features and (ii) the extracted visual features, wherein each audiovisual input vector comprises a hybrid logical unit that exhibits properties of both (a) the phonemes and (b) the visemes;

means for creating audiovisual configurations from the audiovisual input vectors, wherein the audiovisual configurations comprise speaking face movement components in an audiovisual space; and

means for performing a semantic association procedure on the audiovisual input vectors to obtain an association between phonemes that represent the speaker's speech and visemes that represent the speaker's face for each audiovisual input vector.

Support for the amendments to claim 1 (as well as for claim 12) can be found in the specification at least on page 5, lines 27-31; page 6, lines 22-32; page 7, lines 1-7; page 11, lines 27-31; page 12, lines 1-8; page 14, lines 3-11; page 16, lines 5-7; and Figures 3-8.

As presented herein, Claim 1 has been amended to more clearly articulate the novel and non-obvious distinct features thereof. For instance, as disclosed in the original specification on page 11, lines 27-31 and page 12, lines 1-8, the relevant speaking face movement components are in an *audiovisual* space, as opposed to a *visual space alone*. The audiovisual space advantageously provides for a more

comprehensive and correct analysis. For example, while the syllable "pa" and the syllable "ba" look the same in visual space, the pronunciation is different. In the audiovisual space, as presently claimed, the audiovisual input vector of the "pa" syllable and the audiovisual input vector of the "ba" syllable are *clearly* distinguished.

Claims 1-3, 7-14, 18-25 and 29-33 were rejected under 35 U.S.C. §103(a) as being unpatentable over **Francini** et al. (US 7,123,262, hereinafter referred to as "**Francini**") and further in view of **McMillan** et al. (US 6,661,418, hereinafter referred to as "**McMillan**"). With respect to claims 10, 21, 23-25 and 29-33, the same have been canceled herein, thus rendering the rejection thereof now moot.

With respect to claim 1, as amended herein, Applicant respectfully traverses this rejection on the grounds that the references are defective in establishing a *prima facie* case of obviousness.

As the PTO recognizes in MPEP § 2142:

*... The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness...*

It is submitted that, in the present case, the examiner has not factually supported a *prima facie* case of obviousness for the following reasons.

#### **1. Even When Combined, the References Do Not Teach the Claimed Subject Matter**

The **Francini** and **McMillan** references cannot be applied to reject claim 1 under 35 U.S.C. §103 which provides that:

*A patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains ...* (Emphasis added)

Thus, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, since neither **Francini** nor **McMillan** teach “*means for creating audiovisual input vectors from (i) the extracted audio features and (ii) the extracted visual features, wherein each audiovisual input vector comprises a hybrid logical unit that exhibits properties of both (a) the phonemes and (b) the visemes; means for creating audiovisual configurations from the audiovisual input vectors, wherein the audiovisual configurations comprise speaking face movement components in an audiovisual space; and means for performing a semantic association procedure on the audiovisual input vectors” [emphasis added] as is now claimed in claim 1, it is impossible to render the subject matter of claim 1 as a whole obvious, and the explicit terms of the statute cannot be met.*

Thus, for this reason, the examiner’s burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103 should be withdrawn.

## 2. The Combination of References is Improper

Assuming, arguendo, that the above argument for non-obviousness does not apply (which is clearly not the case based on the above), there is still another compelling reason why the **Francini** and **McMillan** references cannot be applied to reject claim 1 under 35 U.S.C. §103.

§ 2142 of the MPEP also provides:

*...the examiner must step backward in time and into the shoes worn by the hypothetical ‘person of ordinary skill in the art’ when the invention was unknown and just before it was made.....The examiner must put aside knowledge of the applicant’s disclosure, refrain from using hindsight, and consider the subject matter claimed ‘as a whole’.*

Here, neither **Francini** nor **McMillan** teaches, or even suggests, the desirability of the combination since neither teaches the specific "*means for creating audiovisual input vectors from (i) the extracted audio features and (ii) the extracted visual features, wherein each audiovisual input vector comprises a hybrid logical unit that exhibits properties of both (a) the phonemes and (b) the visemes; means for creating audiovisual configurations from the audiovisual input vectors, wherein the audiovisual configurations comprise speaking face movement components in an audiovisual space; and means for performing a semantic association procedure on the audiovisual input vectors*" [emphasis added] as specified above and as claimed in claim 1.

Thus, it is clear that neither reference provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103 rejection.

In this context, the MPEP further provides at § 2143.01:

*The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.*

In the above context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. In the present case it is clear that the combination as suggested by the office action arises solely from hindsight based on the invention without any showing, suggestion, incentive or motivation in either reference for the combination as applied to claim 1. Therefore, for this reason, the examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met, and the rejection under 35 U.S.C. §103 should be withdrawn.

Accordingly, claim 1 is allowable and an early formal notice thereof is requested. Claims 2-3, 7-9 and 11 depend from and further limit independent claim 1 and therefore are allowable as well.

As presented herein, claim 12 has been amended in a similar manner with respect to the amendments to claim 1. Accordingly, the rejection of claim 12 is traversed for at least the same reasons presented herein above with respect to overcoming the rejection of claim 1. Thus claim 12 is also believed allowable and an early formal notice thereof is requested. Claim 13-14, 18-20 and 22 depend from and further limit independent claim 12 and therefore are allowable as well.

Claims 4-6, 15-17 and 26-28 were rejected under 35 U.S.C. §103(a) as being unpatentable over **Francini** et al. (US 7,123,262, hereinafter referred to as "**Francini**") in view of **McMillan** et al. (US 6,661,418, hereinafter referred to as "**McMillan**") and further in view of **Basu** et al. (US 6,366,885, hereinafter referred to as "**Basu**"). With respect to claims 26-28, the same have been canceled herein, thus rendering the rejection thereof moot. With respect to claims 4-6 and 15-17, Applicant respectfully traverses this rejection for at least the following reasons.

Claims 4-6 depend from and further limit independent claim 1 and therefore are allowable as well. Claims 15-17 depend from and further limit independent claim 12 and therefore are allowable as well. The 35 U.S.C. §103(a) rejection thereof has now been overcome.

### **Conclusion**

Except as indicated herein, the claims were not amended in order to address issues of patentability and Applicants respectfully reserve all rights they may have under the Doctrine of Equivalents. Applicants furthermore reserve their right to reintroduce

subject matter deleted herein at a later time during the prosecution of this application or a continuation application.

It is clear from all of the foregoing that independent claims 1 and 12 are in condition for allowance. Claims 2-9 and 11 depend from and further limit independent claim 1 and therefore are allowable as well. Claims 13-20 and 22 depend from and further limit independent claim 12 and therefore are allowable as well.

The amendments herein are fully supported by the original specification and drawings; therefore, no new matter is introduced. An early formal notice of allowance of claims 1-9, 11-20 and 22 is requested.

Respectfully submitted,

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